

Mineral Exploration in Nova Scotia: Industry Highlights, Supporting Geoscience Activities, and Regional Correlations

M. A. MacDonald, P. K. Smith and C. E. White

The recent surge in prices for virtually all mineral products has led to substantial increases in mineral exploration and development expenditures in Nova Scotia over the past few years, as in many other global jurisdictions. Mineral commodities that are currently being targeted in Nova Scotia by mining companies include, but are not restricted to, gold, coal, base metals (i.e. copper, lead, zinc), industrial minerals and dimension stone. Several recent highlights in the provincial mineral industry include: the reopening of the Gays River lead-zinc mine by Acadian Mining Corporation; dewatering of tunnels in preparation for advanced exploration activities by Xstrata Donkin Mine Development Alliance for the Donkin coal resource block in the Sydney coalfields; prefeasibility and permitting work at the Touquoy (Moose River) gold deposit by Atlantic Gold NL; encouraging drill results by Merrex Resources Inc. and Coxheath Resources Ltd. at their Jubilee lead-zinc and Coxheath polymetallic properties respectively; and the acquisition of a large number of mineral claims in central Nova Scotia, between Cape d'Or and Guysborough, for planned exploration for iron oxide-copper-gold (IOCG) deposits.

An important component of the geoscience activities conducted by the Geological Services Division of the Nova Scotia Department of Natural Resources is to provide information and advice to the mineral industry. These activities include mineral deposit studies, bedrock and surficial geological mapping, geochemical and mineral grain studies, and regional metallogenic synthesis. Two of the more substantial geoscience projects undertaken in support of mineral exploration include: (1) bedrock mapping and litho-geochemistry, gold grain studies and structural synthesis of gold vein deposits in support of exploration in the Meguma Supergroup rocks; and (2) regional bedrock mapping, geochemical analysis of soils, reprocessing of geophysical data, mineral deposit, and isotopic studies of portions of central Nova Scotia adjacent to faults within the Cobequid-Chedabucto Fault Zone for IOCG deposits.

Nova Scotia shares many common geological features with its neighbouring Atlantic Canadian provinces, because these regions collectively represent the northeastern extension of the Appalachian Orogen. Both New Brunswick and Newfoundland are experiencing robust mineral exploration expenditures for a wide range of commodities in numerous geological environments, some of which are currently under-explored in Nova Scotia. Accordingly, these related geological settings are considered to have excellent exploration potential.